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EXAMINER	
SURVILLO, OLEG	

ART UNIT	PAPER NUMBER
2442	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/921,936	RAO ET AL.	
	Examiner	Art Unit	
	OLEG SURVILLO	2442	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12,14,16,17,19-33,35-51,53-64 and 81* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12,14,16,17,19-33,35-51,53-64 and 81* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Claims 1-12, 14, 16, 17, 19-33, 35-51, 53-64, and 81 remain pending in the application. Claims 1, 17, 33, and 49 are currently amended. Claims 13, 15, 18, 34, 52, and 65-80 have been canceled. No new claims have been added.

Response to Arguments

2. With regard to the applicant's remarks dated December 22, 2008:

regarding objection to claims 13 and 15 under 37 CFR 1.75(c), since claims have been canceled, the objection is moot.

Regarding the rejection of claims 49-64 under 35 U.S.C. 112, first paragraph, applicant's amendment and arguments have been fully considered, but they are not persuasive. As to claim 49, applicants argue that *"amended claim 49 includes three different means for functions with each function relying on different structural support in the specification. In one embodiment, a switch or a router provides the means for appending address registration information to a message. A switch or a router in combination with a link provides the means for sending the message between a router of a router network and a switch of a switch network. The local area network management system provides the means for using the address information. Thus, amended claim 49 is not a single means claim"*. Examiner fails to see three different means, as discussed below under appropriate heading. It is noted that although in one embodiment a switch or a router provides the means for appending address registration

information to a message and the local area network management system provides the means for using the address information, the claimed system is not limited to argued embodiment. Claim 49 is broad enough to include other embodiments, wherein in the at least one embodiment a sequence of computer executable instructions provides the means for appending, means for sending, and means for using. Therefore, the rejection is maintained.

Regarding the rejection of claims 6, 26, 42, and 58 under 35 U.S.C. 112, second paragraph, applicant's arguments have been fully considered, but they are not persuasive. As to claims 6, 26, 42, and 58, applicants argue that support is found in the specification and bring examiner's attention to par. [0024]. Applicants further argue that *"the address registration information includes bytes such as spare bytes 616"* (with reference to Fig. 6). This argument is not persuasive because applicants err in equating claimed "address registration information" with the ELMI message depicted in Fig. 6 and discussed at par. [0024]. The address registration information is what contained in the ELMI message, in such fields as 610, 612, 614, and 616 of the ELMI message. The address registration information is not the same as the ELMI message. Therefore, the rejection is maintained.

Regarding the rejection of claims 49-64 under 35 U.S.C. 101, applicant's arguments have been fully considered, but they are not persuasive. Therefore, the rejection is maintained. Applicants presented substantially analogous arguments as those discussed with regards to 35 U.S.C. 112, first paragraph rejection. These

arguments are not persuasive for analogous reasons as those discussed above and are not repeated for brevity.

Regarding the rejection of claims 1, 2, 4-23, 25-39, 41-55, 57-64, and 81 under 35 U.S.C. 103(a), applicant's arguments have been fully considered, but they are not persuasive. Applicants argue at page 16 of remarks that *"ILMI Spec fails to disclose a local area network management system or a wide area network management system that uses address registration information to map the network of routers and the network of switches"*. This argument is not persuasive because ILMI Spec discloses this limitation, as discussed in the last Office action at pages 7-8. Applicants argue at page 17 of remarks that *"the ILMI Spec is silent regarding the access and mapping of a neighboring network of switches or routers"*. This argument is not persuasive because the ILMI Spec discloses using a proxy-agent to provide access to a neighboring ATM interface with MIB data as illustrated in Figure 6. The ILMI Spec also discloses having a plurality of neighboring devices, having ATM interfaces, attached to the network, wherein the NMS does not have a direct access to those external devices (page 78 section A.2 Overview, par. 1). The fact that Fig. 6 illustrates a single remotely accessible ATM interface does not limit the disclosure of the ILMI Spec to accessing and mapping of a single neighboring switch or router. Applicants further argue that "ILMI Spec fails to disclose that the proxy-agent uses address information to map a neighboring network of switches or routers". Absent the specificity in the claim of what constitutes "using address information to map a neighboring network of switches or routers" this argument is not persuasive for analogous reasons as those discussed just

above. In response to applicant's argument that the ILMI Spec does not disclose the newly added limitation of claim 1, it is noted that the claim fails to further specify as to what constitutes "accessing each router in the network of routers and each switch in the network of switches" such that the specific steps taken as part of "accessing" would patentably distinguish claimed invention from the disclosure of the ILMI Spec. Such specific steps are disclosed (and not currently claimed) in at least par. [0023] of the specification. Applicants are advised to introduce these steps as comprising the broad limitation of "accessing each router in the network of routers and each switch in the network of switches" in order to distinguish from teachings of the ILMI Spec.

At page 18 of remarks applicants argue that *"Hanaki fails to disclose that the CNM agent uses address information to map LAN elements or that the LAN NMS uses address information to map WAN elements. Hanaki fails to disclose the limitation "wherein either the local area network management system or the wide area network management system uses the address registration information to map the network of routers and the network of switches by accessing each router in the network or routers and each switch in the network of switches"".* In response to this argument it is noted that Hanaki was not relied on to teach the argued limitation. Therefore, whether or not Hanaki discloses the argued limitation, examiner has no comment. Applicants further argue that *"it would be impermissible hindsight to combine ILMI Spec with Hanaki based on applicants' own disclosure".* This argument amounts to a general allegation because the motivation to combine the teachings of the ILMI Spec and those of Hanaki was not

based on applicants' own disclosure, but was based on the disclosure of Hanaki. See page 8 of the last Office action.

As to any arguments not specifically addressed, they are the same as those discussed above.

Claim Objections

3. Claims 14, 16, 19, 35, and 53 are objected to under 37 CFR 1.75(c), as being of improper dependent form for depending on canceled claims. Applicant is required to cancel the claims, or amend the claims to place the claims in proper dependent form, or rewrite the claims in independent form. In particular, claims 14 and 16 should be amended to depend on claim 1, claim 19 should be amended to depend on claim 17, claim 35 should be amended to depend on claim 33, and claim 53 should be amended to depend on claim 49.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 49-51 and 53-64 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

Claim 49 incorporates means-plus-function language limitations reciting a function to be performed rather than a definite structure for performing that function.

As evidenced by claims 33 and 36, the claimed functionality can be performed, in at least one embodiment, by a sequence of computer executable instructions. Thus, computer readable instructions are identified, in at least one embodiment, as the corresponding structure that performs the claimed functionality.

Therefore, if the claim was written as "means for appending, sending, and using", that claim would be a subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. Clearly, applicants should not be able to avoid an undue breadth rejection by a mere formalism of splitting a single means (a sequence of computer executable instructions) for performing three functions into three separate means.

As a result, claim 49 is a single means claim, i.e. where a means recitation does not appear in combination with another recited element of means, and is, therefore, subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. *In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983)*

MPEP 2164.08(a)

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 6, 26, 42, and 58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 6 (and claims 26, 42, and 58 by extension), the limitation of "address registration information comprises spare bytes" is ambiguous because it is unclear how

"information" may comprise "bytes". It is well known that "byte" is a basic unit of measurement for file size and is made up of 8 bits of data. Therefore "spare bytes" may comprise data (information), but whether data (information) comprises "spare bytes" is not clear. Appropriate correction or explanation is required.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 49-51 and 53-64 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 49 incorporates means-plus-function language limitations reciting a function to be performed rather than a definite structure or materials for performing that function.

As to claim 49, limitations: "means for appending", "means for sending", and "means for using" are interpreted to invoke 35 U.S.C. 112, sixth paragraph.

Evidence is present in claims 33 and 36 which suggests that functionality of appending, sending, and using can be performed, in at least one embodiment, purely by a sequence of computer executable instructions. Therefore, "means for appending", "means for sending", and "means for using" are reasonably interpreted in light of claims 33 and 36 as computer instructions.

Since all means recitations are provided by computer executable instructions, a system of a computer software per se is not in one of the statutory categories.

The use of the word "system" does not inherently mean that the claim is directed to a machine. Only if at least one of the claimed elements of the system is a physical part of a device can the system as claimed constitute part of a device or a combination of devices to be a machine within the meaning of 35 U.S.C. 101.

As to claims 50, 51 and 53-64, additional means-plus-function language does not introduce any tangible elements, as evidenced by corresponding claims 35-48 directed to computer executable instructions performing specified function(s).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 1, 2, 4-12, 14, 16, 17, 19-23, 25-33, 35-39, 41-51, 53-55, 57-64, and 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Non-Patent Literature document titled "Integrated Local Management Interface (ILMI) Specification, Version 4.0" (hereinafter *ILMI Spec*) in view of Non-Patent Literature document titled "LAN/WAN Management Integration using ATM CNM Interface" by Hanaki et al. (hereinafter *Hanaki*).

As to claim 1, ILMI Spec shows:

address registration information (section 9 at page 60) to be appended to a message [ILMI message] sent between a router [first ATM device] and a switch [second

ATM device] (Fig. 1 at page 3) over a connection between the router and the switch [ILMI communication takes place between adjacent IMEs over physical links or virtual links] (page 1, under section Scope), wherein either the local area network management system or the wide area network management system [Network Management Station] uses the address registration information to map the network of routers and the network of switches (pages 77-79 section Annex A. Network Management Access to ILMI data) by accessing each router in the network of routers and each switch in the network of switches [confirming the configuration of the ATM interfaces on devices attached to its network] (page 78 under A.2 Overview, par. 1).

ILMI Spec does not expressly show NMS at Fig. 6 is specifically a local area network management system (LMS) to manage and configure a network of routers, and/or a wide area network management system (WMS) to manage and configure a network of switches.

Hanaki shows:

a local area network management system to manage and configure a network of routers [LAN NMS] (page 13; Fig. 1 section 2 at page 14); and

a wide area network management system to manage and configure a network of switches [WAN OS (CNM Agent)] (page 13; Fig. 1 section 2 at page 14).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of ILMI Spec and those of Hanaki in order to perform cooperation between LAN and WAN at the network management level and end-to-end connections management over the whole network by using connection information from

both LANs and WANs (Hanaki, page 13 under section 1. Introduction).

As to claim 2 (and claims 23, 39, and 55 by extension), ILMI Spec shows that the address registration information comprises an interface index (section 8.2.2.1 at page 19 and section 9.4.1.1 at page 62).

As to claim 4 (and claims 25, 41, and 57 by extension), ILMI Spec shows that the interface index comprises a port number from which the message was sent [Interface Index object (atmf**PortIndex**) (emphasis added) that identifies a particular physical or virtual interface on the ATM device] (section 8.2.2.1 at page 19).

As to claim 5 (and claims 22, 38, and 54), ILMI Spec shows that the address registration information comprises an Internet Protocol address [network prefix] (section 9.4.1.2 at page 63).

As to claim 6 (and claims 26, 42, and 58), these claims are examined as best understood. To this extent, it would have been an obvious matter of design choice to include spare bytes in an SNMP or an ILMI message sent between devices since having spare bytes does not appear to solve a particular problem, nor it is for a particular purpose, and it appears that the method/system/program would function equally well without spare bytes.

As to claim 7 (and claims 27, 43, and 59), ILMI Spec shows that the router sends the message (pages 1-2 under section Scope; page 4 under section 1. ILMI Functions; pages 77-79 section Annex A. Network Management Access to ILMI data).

As to claim 8 (and claims 28, 44, and 60), ILMI Spec shows that the switch sends the message (pages 1-2 under section Scope; page 4 under section 1. ILMI Functions; pages 77-79 section Annex A. Network Management Access to ILMI data).

As to claim 9 (and claims 29, 45, and 61), ILMI Spec shows that the message is an enhanced local management interface message [ILMI message] (pages 1-2 under section Scope; page 4 under section 1. ILMI Functions; pages 77-79 section Annex A. Network Management Access to ILMI data).

As to claim 10 (and claims 30, 46, and 62), ILMI Spec shows that the message is sent when the network of switches and the network of routers are first configured (sections 9.2.1 to 9.2.6 at page 61; section 9.3 General Description of Procedures at page 62).

As to claim 11 (and claims 31, 47, and 63), ILMI Spec shows that the message is sent when the network of switches and the network of routers has a change in configuration (sections 9.2.1 to 9.2.6 at page 61; section 9.3 General Description of Procedures at page 62).

As to claim 12 (and claims 32, 48, and 64), ILMI Spec shows that the message is sent at a regular interval (sections 9.2.1 to 9.2.6 at page 61; section 9.3 General Description of Procedures at page 62).

As to claim 14, ILMI Spec in view of Hanaki shows that the local area network management system configures the network of switches [performing configuration discovery, fault isolation and troubleshooting. See page 78, first paragraph in ILMI Spec] (as discussed per claim 1 above).

As to claim 16, ILMI Spec in view of Hanaki shows that the wide area network management system configures the network of routers [performing configuration discovery, fault isolation and troubleshooting. See page 78, first paragraph in ILMI Spec] (as discussed per claim 1 above).

As to claim 17, ILMI Spec shows:

appending address registration information (section 9 at page 60) to a message [ILMI message];

sending the message between a router [first ATM device] and a switch [second ATM device] (Fig. 1 at page 3) [ILMI communication takes place between adjacent IMEs over physical links or virtual links] (page 1, under section Scope).

ILMI Spec does not expressly show a network of routers and a network of switches.

Hanaki shows:

a network of routers (page 13; Fig. 1 section 2 at page 14); and

a network of switches (page 13; Fig. 1 section 2 at page 14).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of ILMI Spec and those of Hanaki in order to perform cooperation between LAN and WAN at the network management level and end-to-end connections management over the whole network by using connection information from both LANs and WANs (Hanaki, page 13 under section 1. Introduction).

ILMI Spec in view of Hanaki further shows using the address registration information to map the router network from a wide area network management system controlling the switch network, as discussed per claim 1.

As to claims 19, 35, and 51, ILMI Spec in view of Hanaki shows configuring the router network using the wide area network management system, as discussed per claim 16.

As to claims 20 and 36, ILMI Spec in view of Hanaki shows using the address registration information to map the switch network from a local area network management system controlling the router network, as discussed per claim 1.

As to claims 21, 37, and 53, ILMI Spec in view of Hanaki shows configuring the switch network using the local area network management system, as discussed per claim 14.

As to claim 33, ILMI Spec and Hanaki discuss a computer implemented method and system as discussed per claims 1 and 17. Thus, ILMI Spec in view of Hanaki inherently shows a machine-readable storage medium embodying a sequence of instructions executable by a machine to perform the method steps, as discussed per claim 17.

As to claim 49, ILMI Spec in view of Hanaki inherently shows means for appending address registration information to a message; means for sending the message between a router of a router network and a switch of a switch network, as discussed per claim 17; and means for using the address registration information to map the switch network from a local area network management system controlling the router network, as discussed per claim 1.

As to claim 50, ILMI Spec in view of Hanaki shows using the address registration information to map the router network from a wide area network management system controlling the switch network, as discussed per claim 1.

As to claim 81, ILMI Spec in view of Hanaki shows:

appending address registration information to a message (as discussed per claim 17);

sending the message between a router of a router network and a switch of a switch network (as discussed per claim 17);

using the address registration information to map the router network from a wide area network management system controlling the switch network (as discussed per claims 1 and 17);

configuring the router network using the wide area network management system (as discussed per claims 16 and 19);

using the address registration information to map the switch network from a local area network management system controlling the router network (as discussed per claims 1 and 20); and

configuring the switch network using the local area network management system (as discussed per claims 14 and 21).

12. Claims 3, 24, 40, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over ILMI Spec in view of Hanaki and in further view of Crooks (US 2002/0055988 A1).

As to claim 3 (and claims 24, 40, and 56 by extension), ILMI Spec shows that the interface index comprises the Interface Index object (atmf**PortIndex**) (emphasis added) that identifies a particular physical or virtual interface on the ATM device (section 8.2.2.1 at page 19).

ILMI Spec in view of Hanaki does not expressly show the interface index comprising a slot number from which the message was sent.

Crooks shows identifying each LAN component by configuration information such as a slot number or a port number (par. [0021]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system/method/program of ILMI Spec in view of Hanaki by having a slot number as the interface index object as an alternative to a port number in order to alternatively identify each LAN component from which information is sent.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLEG SURVILLO whose telephone number is

(571)272-9691. The examiner can normally be reached on M-Th 8:30am - 6:00pm; F 8:30am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Oleg Survillo

Phone: 571-272-9691

/Andrew Caldwell/
Supervisory Patent Examiner, Art Unit 2442